



# Changes in elephant movements in the Western Wildlife Corridor, Ghana

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## Key messages

- The savannahs of northern Ghana were historically an important habitat for elephants.
- The Western Wildlife Corridor (WWC) was identified in 2007 as one of the two main elephant migratory corridors between northern Ghana and southern Burkina Faso.
- The WWC encompasses over 100 villages; livelihood activities in these villages include farming, livestock keeping, small-scale mining and fuelwood extraction, which are putting pressure on resources.
- Elephant presence and movement in the corridor became sporadic in the 1970s with increasing habitat fragmentation and hunting pressure.
- Elephants have changed their routes in the corridor since the 2000s, and now tend to move along the channels of rivers and their tributaries.
- Farmland expansion and livestock grazing are the two most important factors that have forced elephants to change their routes.
- Establishment of a continuum of effective community resource management areas (CREMAs)<sup>a</sup> throughout the WWC may restore its function as an effective corridor for elephants.

<sup>a</sup> Community resource management areas (CREMAs) in Ghana are protected areas managed under a community-based governance regime to reduce pressure on national parks and wildlife reserves (Agyare et al. 2015).

## Introduction

Ghana is home to an estimated 900–1,000 elephants. There has been a dramatic decline in their population since the 1970s when there were estimated to be 20,000–30,000 elephants (Kwarteng 2015). This decline is due to a combination of factors including habitat loss, poaching and human–wildlife conflicts.

Wildlife corridors are crucial in Ghana as they connect several elephant ranges in the West African sub-region. Ghana has three active wildlife corridors – the Western Wildlife Corridor (WWC), the Eastern Wildlife Corridor and the Bui Wildlife Corridor. The WWC links Mole National Park (MNP) in northern Ghana with the Nazinga Game Ranch in southern Burkina Faso (Ouedraogo et al. 2007). The corridor is part of the

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northern Ghana elephant range (Wildlife Division 2000) and encompasses over 100 communities that derive their livelihoods from natural ecosystems in the corridor (Majam et al. 2017; Binlinla 2022).

This information brief presents preliminary findings on the history of elephant movement dynamics in the WWC as well as the causal factors of changes in their routes. It also provides recommendations for the sustainable management of the corridor.

## Methods

We used a mixed-methods approach that included: a literature review on elephant populations, distribution and movement in Ghana; key informant interviews with experienced hunters and community elders about elephant movements in their vicinity and with park managers and range officers at the MNP and Gbele Game Resource Reserve as well as forest guards in charge of forest reserves in the WWC; and focus group discussions (FGDs) in six community resource management area (CREMA) communities (48 female and 53 male participants) purposively selected across the length of the WWC to cover its entirety.

## History of elephant movement in the WWC

Until the 1970s, elephants moved freely in the current WWC areas from the Nazinga areas in Burkina Faso to the Mole areas in Ghana. The elephants would move along some tributaries of the White Volta River to the greater Mole area using the channels of the Sissili, Saphe and Kulpawn rivers. They took a circular route through corridors that connected their habitat. The movement was within areas between the Black and White Volta rivers in northern Ghana. From the greater Mole area, elephants would move southwards to the Bui area at the transition between forest and savannah, and then turn and move northwards along riparian areas of the White Volta River to areas where the Red Volta River enters Ghana from Burkina Faso. From this point, the elephants would take a north-west direction and go back to their Nazinga residential area in Burkina Faso (Figure 1). The elephants often moved from September to November, a transitional period between the rainy season and the dry season.

In spite of having to protect crops from elephant destruction, local residents did not persecute

elephants in most areas because the elephant was considered a totem (Kwarteng 2006). Supporting this narrative, all communities visited during the current study indicated that human–wildlife conflicts did not arise in the past.

There is indirect evidence of large numbers of elephants in the northern savannah area of Ghana in the second half of the 19<sup>th</sup> century when ivory exports from West Africa through the Gold Coast boomed, with exports of 6,671 kg of ivory in 1859 (Feinberg and Johnson 1982). Though not all these would have been sourced from the Gold Coast, merchants would have preferred ivory from the Gold Coast to cut down on transportation costs, so it is likely that a large proportion of the ivory was sourced from the region.

There appears to have been a large elephant population in the northern savannah areas at the beginning of the 20<sup>th</sup> century because officials of the colonial government in 1909 reported widespread destruction of farms and crops by elephants in the Northern Territories (Kwarteng 2015). In 1949, to curb the destruction of crops and control tsetse flies in the Northern Territories, the colonial government rolled out a policy to extirpate herbivorous game animals that served as host for the tsetse fly (Kwarteng 2015). Thousands of elephants were killed as a result of this policy (Kwarteng 2015).

Local community elders recounted that by the 1970s, elephant visits to communities in the middle of the WWC became rare. Only one or two elephants would occasionally pass through the Fumbisi, Nakong and Yizisi areas. These communities are relatively far from the wildlife-protected areas (Nazinga and Mole) at the terminal points of the WWC. From the 2000s, when elephants occasionally passed by communities in the middle of the WWC, the residents became excited and tried to follow them. This likely caused the elephants to change their movement patterns as they tried to flee human-dominated areas.

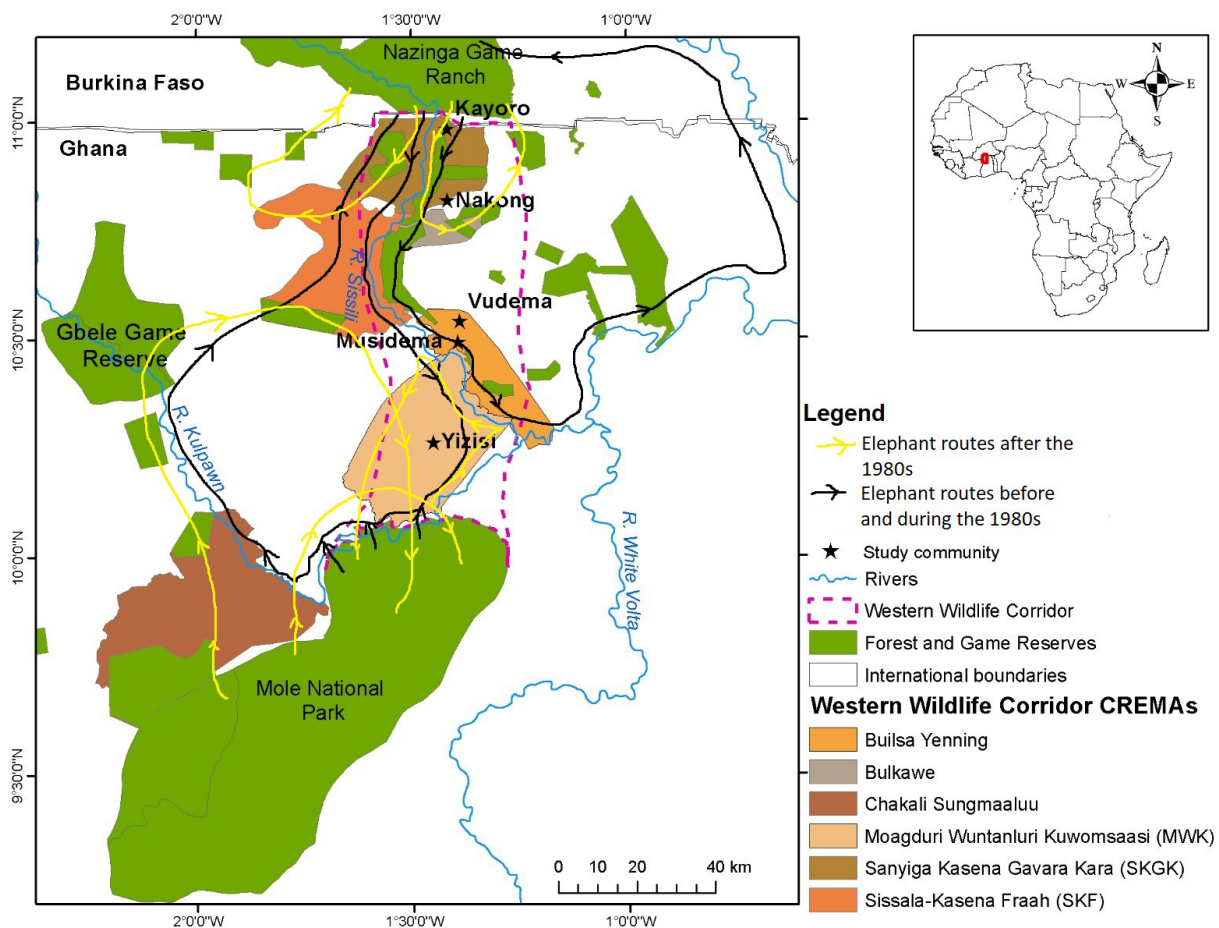
Since the establishment of community resource management areas (CREMAs) in the 2000s, the executive committee members of the CREMAs would inform wildlife authorities when elephants strayed onto community lands.

Not surprisingly, elephants frequently visit communities closer to the wildlife-protected areas. It was reported during some of the FGDs that in the 1990s, elephants visited farms annually

or at least once every three years in communities that fringe the Mole and Nazinga protected areas. Residents of Kayoro, an adjacent community to the Nazinga Game Ranch, reported that elephants visited their farms every year until the Nazinga authorities created watering points that now attract the elephants.<sup>3</sup> The elephants still come through but not as frequently as they did before the water holes were created.

Communities closer to the MNP experience a similar frequency of elephant visits. Residents of Kulpong, which is to the north-west of the MNP reported that elephants visit at least once every two years. A 67-year-old participant in the FGD at Kulpong recounted: "When we were young, the elephants would come in large numbers and pass through our village to the Chasea area and go towards Burkina Faso, but now two or three will come in the night and 'steal' our crops in our farms and go back".

From the various descriptions in the FGDs and from interview respondents, it appears that elephant movement outside the protected areas now follows a horseshoe-shaped route starting from a point on the border of the protected area through contiguous farmlands and back into the protected area (Figure 1). The lack of a suitable habitat in the off-reserve areas and human disturbance (especially noise) deter them from going through the corridor to the next range. Occasionally, some elephants move through the corridor to try to reach the next range but encounter human interference and lack of sufficient food and water. These elephants become stranded and are chased around by local farmers or killed by local hunters. For instance, at the FGD in Yizisi, a CREMA executive member recounted: "In 2002, two elephants strayed into our farming area and by the next morning, local hunters mobilized and killed them. Only blood stains could be seen at the sites where they were killed; all the meat and other body parts were carted away in the night".



**Figure 1. Map of the Western Wildlife Corridor (WWC) showing elephant routes in and around the WWC before and after the 1980s**

<sup>3</sup> Eleven watering points were constructed between 1984 and 1997 according to the Manager of the Nazinga Game Ranch (K. Tiendrebeogo, personal communication, 25 September 2024).

## Why did elephant routes change in the Western Wildlife Corridor?

Descriptions from the interviews suggest that elephant routes changed markedly from the 1970s. Elephant routes have been affected by human activities such as farming, logging, grazing of livestock and expansion of built-up areas (Figure 2). Elephant movements are now limited to the protected areas and their immediate environs. The elephants appear to be limiting their movement to avoid encounters with humans and human activities. A key informant from the Wildlife Division of the Forestry Commission remarked: “Elephants want to avoid humans and their activities; so, they always want to stay or pass through areas with enough vegetation cover... you know, nowadays it is basically the protected areas that have such vegetation cover, and those are the places where you will now find elephants”.

Noise was identified as the most important deterrent of elephants (Figure 2). Noise from vehicles and machinery, farms, communities, logging and mining activities were said to be rampant in the WWC. A 75-year-old female participant at the Yizisi FGD explained: “Elephants are gentle animals that do not like noise. When we were young and the number of people were just few, the elephants used to visit our village frequently. But now, due to increased human population and economic activities, there is noise everywhere, almost all the time, so the elephants no longer visit our area”.

The expansion of farms and the consequent disappearance of trees was another major cause of change in elephant routes in the WWC.

The native vegetation is often cleared to give way for farmland and elephants avoid these open areas for safety. A CREMA executive member at the Kayoro FGD explained: “My brother, the elephant, like any other wildlife species, needs cover to hide itself. But you will agree with me that the elephant is not like a bush rat to bore holes in the ground or hide under grass; it needs big trees to cover it. So, if all the big trees in an area are cleared, elephants will vanish from that area”. The activities of illegal small-scale miners at Pido and Kende near Nakong and Kulpong, respectively, were also identified as barriers to elephant movement in the WWC. The mining activities do not only cause noise and water pollution, but also remove vegetation cover.

Local communities identified the drying up of rivers and streams in the WWC as another reason elephants do not use the full stretch of the corridor. A participant in the FGD at Nakong recounted: “Many streams and

water holes that the elephants used to follow in our community lands do not hold water anymore,...but without water the elephants will not come”. Many of the locals believe that elephants are creatures that follow water and will only visit places where there is water. Many ephemeral streams in the corridor are reported to be completely dry and silted and the Sissili and Kulpawm rivers no longer flow in the dry season. This phenomenon was attributed to rampant deforestation and grazing by livestock, which expose the water bodies to direct sunlight and siltation.

Human–elephant conflicts do not appear to have been an important factor affecting change in elephant routes in the WWC. Poaching for ivory is rare. An old hunter gave the reason why poaching for ivory is no longer lucrative in the current population of elephants in the Kayoro area: “You know, the current population of elephants carry small tusks compared to those we used to kill in the 1970s and 80s. The small tusks have low demand in the ivory market”. Nonetheless, in all the communities visited, participants in the FGDs admitted that hunting is part of some clans’ cultural heritage and that some hunters will go hunting at all costs just to keep their cultural values alive. This category of hunters also targets elephants to increase their fame and prestige. According to the traditional hunters’ hierarchical arrangement, the highest ranked hunters are the ones that have killed an elephant. For this reason, traditional hunters always aspire to kill an elephant to get the highest rank. We were, however, unable to get information on whether such killings had actually occurred in the area. There have been no reported arrests for such killings.

## Conclusion

Elephant routes in the WWC have changed over time with current movement limited to protected areas and their surroundings. A change in elephant routes through the corridor started in the decade preceding Ghana’s independence in 1957. This period coincided with the creation of wildlife-protected areas and the shooting of large game to control tsetse flies in parts of the northern savannah where the WWC is located. By the 1970s, elephant routes were observed mostly along rivers: Sissili, White Volta, Kulpawm and their tributaries, since the riverine vegetation provided food, water and enough cover for the elephants. In recent years, elephants have limited their movement to only the protected ranges (Nazinga Game Ranch and Mole National Park) and their immediate environs. The main reasons for the limited elephant movement are noise, agriculture expansion, drying of water sources, illegal mining and logging. Human–elephant conflicts have

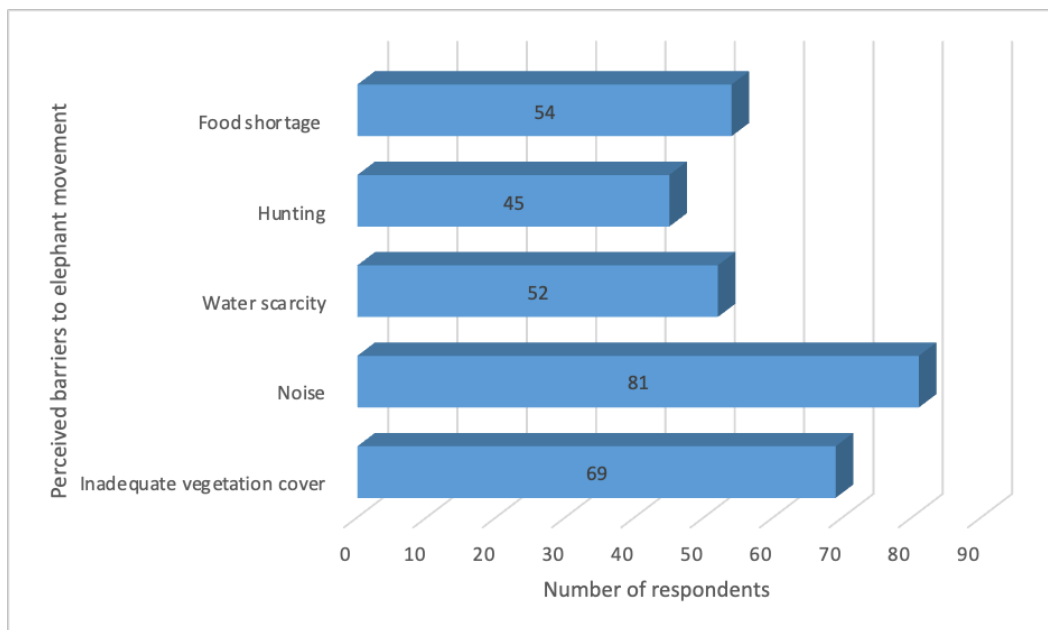


Figure 2. Perception of the factors that determine elephant routes

always been minimal in the WWC because the elephant is a totemic animal to many ethnic groups in the area. In efforts to maintain the corridor, CREMA initiatives are being introduced in many communities across the WWC. The CREMAs are supposed to rewild designated places to attract wildlife including elephants and to provide ecological and economic services to communities. However, there is some level of misunderstanding of the CREMA concept in some communities, as people expressed fear of their lands being taken over by the state through its agencies. There is therefore the need for further education and sensitization on the concept of CREMA in all participating communities. Establishing a series of effective CREMAs connecting protected areas throughout the WWC would support more sustainable management of the corridor.

## Recommendations

- Carry out patrol duties. The Forest Services Division of the Forestry Commission should be resourced adequately to carry out patrol duties in forest reserves within the WWC and beyond. This will ensure that illegal activities in the forest reserves are contained to the barest minimum.
- Undertake GPS surveillance. Observation of elephants via GPS collars or other means would give a better understanding of their numbers and movements.
- Protect CREMA areas and the WWC. To ensure that the CREMA areas are well-managed, community resource management committee (CRMC) members in and around the corridor should be given incentives to motivate them to protect their respective CREMA areas and the WWC at large.

Proposals could be made to conservation non-governmental organizations and other stakeholders to sponsor such an initiative at the onset, and when the CREMAs grow and become self-sustaining, the CRMCs would then be remunerated from CREMA dividends.

- Design and implement wildfire prevention strategies for the corridor. The Forest Services Division of the Forestry Commission could be resourced to train volunteers in the CREMA communities to establish green firebreaks around CREMA areas and the boundaries of the WWC. In addition to this, fire control and prevention education can be given to communities in and around the corridor to promote their use of fire management, prevention and control. The communities identified wildfires as a major setback to natural regeneration and reforestation efforts in the corridor.
- Control grazing activities in the corridor. Most communities in the corridor identified overgrazing as a major challenge to efforts to rewild the corridor. Suggested measures to curb overgrazing in the corridor include: (i) determining appropriate stocking rates based on the carrying capacity of the land and adjusting the number of animals accordingly to prevent overgrazing; (ii) ensuring adequate water sources are available across pastures in the corridor to prevent animals from concentrating in specific areas to avoid localized overgrazing; (iii) educating livestock owners and managers on sustainable grazing practices; and (iv) including whenever possible nomadic herdsmen in discussions and initiatives relating to grazing management in the corridor.
- Support residents in the area in developing alternative livelihood activities in the dry season. The pressure on forest and wildlife resources in

the corridor intensifies in the dry season when farmers have nothing to do on their farms. Some conservation-compatible livelihood activities such as beekeeping and agro-processing are already part of some CREMA initiatives and should be encouraged and extended to other communities. Other activities such as constructing dugouts for dry season vegetable production could also benefit elephants if they are placed strategically to serve as watering points for wildlife including elephants.

- Promote ecotourism and cultural tourism in communities within the corridor. Murugu and Mognori communities are success stories in this regard. Both communities border the Mole National Park and, through their CREMAs, developed ecotourism (canoe safari, cultural tourism and homestay for tourists) generating income for them. These communities have an excellent relationship with the park and illegal activities such as hunting and logging are rarely recorded in those communities.
- Ensure prompt payment of compensation to wildlife depredation victims. Farmers close to wildlife protected areas expressed frustration over the reluctance or refusal of authorities to pay them compensation when elephants and other wild animals raid their crops. This situation breeds hostility towards conservation efforts and some farmers engage in retaliatory killing of wildlife when their crops are destroyed. Prompt payment of adequate compensation could increase positive attitudes towards conservation in general and support for the protection of the WWC.

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